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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|---|---|---|---|
| 09/575,061 | 05/19/00 | TARGAN S | P-PM 4097 |

HM12/1003

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| EXAMINER | |
|---|---|
| GABEL, G | |
| **ART UNIT** | **PAPER NUMBER** |
| 1641 | 10 |

**DATE MAILED:** 10/03/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trad marks**

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/575,061 | TARGAN ET AL. | |
| | Examiner | Art Unit | |
| | Gailene R. Gabel | 1641 | |

*-- The MAILING DATE of this communication appears on the cover sh et with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *19 September 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) *8-13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-13* are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5,6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of Group 1, claims 1-11 and species of SEQ 1D NO. 1, with traverse, in Paper No. 9, filed 9/19/01 is acknowledged and has been entered. Claims 12-13 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being claims drawn to a non-elected invention. Claims 8-11 are also withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being claims drawn to a non-elected species. Accordingly, claims 1-7 are under examination.

2. Applicant's traversal of the election and species requirement in Paper No. 8 is acknowledged. The traversal is on the grounds that SEQ ID NO. 1 and SEQ ID NO. 3 are unified in their use of determining anti-OmpC antibodies in diagnosing Crohn's disease.

This is not found persuasive because restriction requirements are set forth for reasons of patentable distinction between each independent invention so as to warrant separate classification and search. Further, I-2 polypeptide can selectively be used in conjunction with OmpC in determining the presence of anti-OmpC antibodies for diagnosis of Crohn's disease but is a separate invention in that complexation of anti-I-2-antibodies and I-2 polypeptide having SEQ ID NO. 3 is not required in determining the presence of anti-OmpC antibodies in the claimed invention. The record set forth in the previous restriction requirement clearly indicated that the delineated inventions are in

fact patentably distinct each from the other or independent from the other. The requirement is still deemed proper and is therefore made FINAL for reasons of record. Accordingly, claims 1-7 are under examination.

### *Drawings*

3. This application has been filed with informal drawings which are acceptable for examination purposes only. However, formal correction of noted defect can be deferred until application is allowed by the examiner.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite in reciting "OmpC". Acronyms or abbreviations must be recited at least one time in a set of claims.

Claim 2 is indefinite in reciting "OmpC". Acronyms or abbreviations must be recited at least one time in a set of claims.

Claim 2 is incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. Specifically, it is unclear how the detection step is effected in the absence of a label.

The term "substantially" in claim 3 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Braun et al. (US 6,033,864).

Braun et al. disclose that bacteria have been implicated in the initiation and progression of Crohn's disease as supported by the efficacy of antibiotics and diet in mitigating disease in Crohn's patients (see column 1). Braun et al. disclose that perinuclear anti-neutrophil antigen (pANCA) or porin antigen is expressed by bacteria of ulcerative colitis and Crohn's disease patients (see column 6, lines 36-41 and column 10, lines 55-67). Isolation of pANCA-reactive E. coli proteins reveal that the proteins are related to the outer membrane proteins including outer membrane protein F (OmpF) and outer membrane protein C (OmpC), both differing in their sizes of pores (see column 11, lines 40-67). Specifically, Braun et al. disclose a method of diagnosing

Crohn's disease in a subject by obtaining a sample from the subject suspected of having inflammatory bowel disease; contacting the sample with the porin antigen or pANCA reactive fragment thereof, under conditions suitable to form complexes with anti-OmpC antibodies specific to the porin antigens; and detecting the presence or absence of complexes, wherein the presence of complexes indicates that the subject has ulcerative colitis or Crohn's disease (see column 11, lines 16-39 and column 13, lines 16-49). Braun et al. disclose that the term, "porin antigen" encompasses pANCA reactive protein that has a linear or conformational homology to OmpF, OmpC, or another E. coli protein (see column 12, lines 1-9). Braun et al. disclose OmpC antigen in claim 1 and Figure 10, which comprises [substantially] the amino acid SEQ ID NO. 1 recited in claim 3 of the instant invention. The anti-OmpC antibodies specific for the porin antigens can be detected using ELISA (see column 14).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braun et al. (US 6,033,864) in view of Targan et al. (US 5,932,429).

Braun et al. has been discussed supra. Braun et al. differ in failing to disclose further determining the presence of anti-Saccharomyces cerevisiae antibodies (ASCA) in a subject to diagnose that the subject has Crohn's disease.

Targan et al. disclose a method of diagnosing Crohn's disease and its subtypes by determining the presence of antibodies including pANCA and ASCA (see column 12, lines 63-67). The presence of pANCA is determined using ELISA. Specifically, Targan et al. disclose obtaining a serum sample from a patient with Crohn's disease; contacting the sample with antigen specific for pANCA under conditions suitable to form complexes therebetween (see column 13). Targan et al. further disclose contacting the subject's serum sample to antigen specific for ASCA under conditions suitable for forming complexes therebetween. The antigen specific for ASCA may be prepared from yeast cell wall mannans or phosphopeptidomannans (PPM) such as those prepared from ATCC strain #38926 (see columns 14 and 15). In Example II, Targan et al. discloses stratification of Crohn's disease according to pANCA and ASCA.

One of ordinary skill in the art at the time of the instant invention would have been motivated to incorporate the teaching of Targan in using pANCA and ASCA as

markers for diagnosing Crohn's disease into the method taught by Braun which uses OmpC porin antigen in detecting the presence of anti-OmpC antibodies as well as pANCA to diagnose Crohn's disease in a subject because cumulative use of all these markers in a multivariant analysis will specifically allow for better and more accurate assessment method of diagnosing Crohn's disease.

7. No claims are allowed.

***Remarks***

8. Prior art made of record are not relied upon but considered pertinent to the applicants' disclosure:

Chatfield et al. (WO 99/49026) disclose OmpC antigen having SEQ ID NO. 1 as recited in Applicant's claim 3.

Plevy et al. (US 5,968,741) disclose a method for determining the presence of ASCA in a subject to diagnose ulcerative colitis.

Braun et al. (US 5,691,151) disclose a screening method for ulcerative colitis and Crohn's disease using pANCA and VH3-15 autoantibody.

Walsh et al. (US 6,218,129) disclose a method for determining pANCA and ASCA using ELISA in diagnosing inflammatory bowel disease.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gailene R. Gabel whose telephone number is (703)

305-0807. The examiner can normally be reached on Monday to Thursday, 6:30 AM - 4:00 PM and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (703) 308-3399. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Gailene R. Gabel
October 1, 2001

LONG V. LE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

10/01/01